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DESCRIPTION OF NEW SPECIES OF CERAMBYCIDÆ (COLEOPTERA) FROM THE PACIFIC COAST OF NORTH AMERICA WITH NOTES CONCERNING OTHERS.

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This paper is the fifth of a series of short papers dealing with the Coleoptera of this country to be published by me in this journal. It will contain the descriptions of a number of hitherto undescribed species of Cerambycidæ together with a few notes and remarks concerning other and related species.

Phymatodes fasciapilosus n. sp.

Dark piceous, antennæ and base of elytra rufous, underside of thorax and most of legs rufopiceous, each elytron with two decussating white fasciæ; body generally clothed with sparse erect hair, the elytral fasciæ bearing a dense, silky, white, procumbent pile. Head moderately densely, coarsely punctured; the antennæ extending three fourths length of body, the second joint small, less than one half length of third, the third very distinctly longer than the fourth. Prothorax broader than long, as broad as base of elytra, with sides evenly arcuate from apex to just before base where suddenly constricted, and moderately coarsely, rather sparsely punctured, more finely and sparsely at middle. Elytra two and a half times as long as broad, shining and distinctly though sparsely punctured over basal third, subopaque and less distinctly punctured over middle third, and shining and almost impunctate apically; the anterior fasciæ about one third distant from base, extending obliquely outwards and forwards, broader outwardly and slightly crescentic, the posterior fasciæ less than one third distant from apex, extending obliquely outwards and backwards, of uniform width and straight. Male, length 5.5 mm. and breadth 2 mm.; female, length 7 mm. and breadth 2.5 mm.

Type male and female and one paratype in my collection, taken in the Rogue River Valley of Oregon, from the wild grape vine

This species would at first sight be taken to be *P. nitidus* Lec. because of its size, appearance and type of coloration, but it differs from that species by having the third antennal joint always distinctly longer than the fourth, whereas in *nitidus* it is of about the same length, in having the prothorax distinctly broader than long and suddenly constricted at base, markedly contrasting with that of the other which is about as long as broad and gradually narrowed to base, and by having the elytral fasciæ densely clothed with white pile and the mid portion of the elytra subopaque, the entire elytra in the other being shining and with but a hair here and there. *P. decussatus* Lec., perhaps a closer relative, is easily separated by having the posterior two thirds of the elytra densely clothed with a fine pile and by being subopaque. The food plants of the three are also distinct, *fasciapilosus* living on the wild grape, *nitidus* on sequoia, juniper and the various cupressine trees of the Pacific States, and *decussatus* on the white oaks.

Phymatodes funebrus n. sp.

Black with rufous antennæ and with two semilunar fasciæ formed of white pubescence crossing the elytra; the body in general clothed with a few scattered longer and erect hairs. Head with front flat, alutaceous, opaque with a few irregular shallow punctures; the occiput with short gray pile; the antennæ three fourths length of body, second joint longer than broad and one half length of third, the third barely shorter than fourth, the fourth to sixth gradually longer. Prothorax a bit longer than wide and narrower than base of elytra, with sides arcuate at middle and gradually constricted both anteriorly and posteriorly, the disc alutaceous, opaque, and with a rather sparse covering of short and closely appressed gray and black pile. Elytra almost three times as long as broad, with sides almost straight, the disc with a broad black transverse band at the middle, considerably narrowed at the suture and formed of short, black and closely appressed sooty black hair, margined anteriorly by a convex band of silky white pile, the basal area with a sparse gray pubescence, a second silky white pubescent band, somewhat biconvex, margining the median black band posteriorly, the apex sparsely hairy like the base, the general surface where denuded or unclothed as at the base and apex, shining and somewhat æneous. Length 9 mm., breadth 2.25 mm.

Type, captured by Mr. L. S. Slevin at Carmel, Monterey Co., Cal., August 28, 1915, and now in my collection. Paratypes in Slevin collection.

This very interesting species if absolutely denuded might possibly be taken for a very much elongated *P. aeneus* Lec., but when perfect is seen to stand well apart from any other member of the genus. The white fasciæ in this species are made up entirely of pubescence, the underlying portion of the elytra being black as elsewhere.

Phymatodes nigerrimus n. sp.

Entirely black, slightly shining, prothorax and elytra clothed with a short, dense, suberect black pile, elsewhere sparsely hairy. Head rather coarsely, closely punctate, antennæ fully three fourths length of body. Prothorax slightly broader than long, narrower than base of elytra, sides evenly rounded, coarsely, densely and evenly punctate over entire surface except narrow median space running from base to middle which is smooth. Scutellum small but distinctly punctured. Elytra twice as long as broad, sides quite parallel, rounded at apex, disc rather finely, not closely but evenly punctate and subscabrous. Beneath rather coarsely, closely punctate in front, finely and sparsely over abdomen, more shining than above, the legs with femora less distinctly clubbed than usual. Length 8 mm., breadth 3 mm.

Type, in my collection, collected by myself at Carrville, Trinity County, Cal., June 16, 1913, three other specimens in Hopping collection.

This intensely black species cannot be confused with any of the other species of the genus. At first, I thought that it might possibly be a non-fasciate unicolorous black phase of *vulneratus*, seeing that it was captured with a number of these. It is, however, easily separated from this species by its type of vestiture, especially lacking the longer vestiture of the prothorax, by having a denser and more uniform punctuation, and by having less distinctly clavate thighs. From *Callidium vile* Lec., with which it might possibly be confused, it differs by being about twice as large, by having proportionally longer antennæ, the antennæ of the latter in both sexes just about reaching to the middle of the elytra, and by having black pile in place of gray.

Phymatodes decussatus Lec.

This species is decidedly variable. Large series bred from the California valley white oak, *Quercus lobata* Née, have yielded not only the phase with the prothorax and base of elytra rufous but the phase that is all black with the exception of the fasciæ, the *P. obliquus* Casey, as well as intermediates. Both phases are to be met with in various parts of middle and northern California. In Tulare Co., Cal., we have another phase or more properly a geographical race. This is like *obliquus* except that the anterior fasciæ are wanting and the posterior much reduced. This I would designate as the variety *posticus*. I have at present before me one from Camp Nelson, Tulare Co., Cal., collected July, 1913, which will serve as the type and three specimens belonging to Mr. Ralph Hopping. One of these is from Camp Greeley and two from Colony Mill, Tulare Co., Cal. No true specimens of *P. varius* Fab., with which the black phases of *decussatus* have been confused, have been seen from the Pacific Coast.

Phymatodes vulneratus Lec.

This species likewise has several color varieties and also varies greatly in size. In the cooler and more northern parts of its range, it is apt to be all black with the exception of the fasciæ, while in the valleys bordering on San Francisco bay, the specimens are more apt to have the base of the elytra, the meso- and metathorax and the legs rufous. It breeds in the Douglas fir, *Pseudotsuga taxifolia* Britt.

Phymatodes ater Lec.

Three specimens of this rare species, two received from Mr. H. W. Wenzel, from Five Mile Beach, New Jersey, and one from Mr. L. H. Weld, from Evanston, Ill., show that this species belongs to the fasciate group of the genus. In one of the New Jersey specimens, the fasciæ are lacking as is the case with the Le Conte type, in the other the anterior fasciæ are well defined and the posterior just vaguely indicated, while in the Evanston specimen, both sets of fasciæ are very distinct, very oblique, the posterior almost as oblique as the anterior. The characteristic coarse elytral punctuation which so readily distinguishes this species, is equally evident in all three.

Callimus hoppingi n. sp.

Rufo-castaneous, elytra piceous except at base, suture and outer margin, moderately pilose. Head finely, densely and shallowly punctured posteriorly; antennæ three fourths length of body, rather robust and pilose (decidedly more robust than in *cyanipennis* or *ruficollis*). Prothorax as broad as long, sides bluntly tuberculate at middle, dilated near apex, nearly straight and oblique from middle to base, disc shining, with a few fine punctures, fairly pilose and with the usual two blunt tubercles. Elytra more than twice as long as broad, slightly broader posteriorly, sides almost parallel, broadly rounded at apex, disc quite flat, smooth and shining toward base, finely rugose and subopaque at apical two thirds, rather finely sparsely punctate, the punctures distinct over basal area and more and more indistinct toward apex, clothed with moderately dense suberect pile. Beneath with anterior coxæ distinctly separated (much more so than in either *cyanipennis* or *ruficollis*), middle coxæ as widely separated as usual, the surface shining, very minutely and sparsely punctate, moderately pilose, and with the ventral segments as distinctly modified and of the same type as in the other members of the genus. Length 9.5 mm., breadth 3 mm.

Type, a female in my own collection, collected in the mountains of Placer Co., California. Three specimens, likewise females, which I have designated as paratypes, have been loaned to me for purposes of study by Mr. Ralph Hopping, after whom I take pleasure in naming it. Two of these, one from the Giant Forest, collected July, 1905, and the other from Kaweah, Cal., alt. 6,000 ft., collected June 18, are 11 mm. in length, the third from Kaweah, Cal., collected June 7, is but 8 mm. in length. All are fairly constant as to coloration and structure.

This species when compared with the other members of the genus, is seen to be not only more robust and of a different type of coloration, but more pilose, to have heavier antennæ, much less distinctly punctate elytra, and to have the prosternum between the anterior coxæ almost as wide as is the mesosternum between the second pair of coxæ. This last character taken in connection with some of the minor peculiarities might seem to be sufficient to justify its being placed in a new genus but the sum of the major characters are absolutely those of *Callimus* therefore I deem it wise to place it there.

Obrium californicum n. sp.

Castaneous, shining, very sparsely and finely pilose. Head about two thirds width of elytra, eyes moderately prominent, but widely separated above, the distance equalling one half the width of base of head [almost twice as widely separated as in *rufulum* Gahan (*rubrum* Newm.)]; antennæ longer than body in male and fully as long in female. Prothorax one third longer than broad at base, base and apex equal in width, widest at middle, sides slightly constricted in front of and behind median lateral tubercle, disc with a few sparse punctures and fine hairs. Elytra over twice as long as broad, sides straight and almost parallel, apices well rounded, the disc with basal two thirds distinctly punctured, the punctures separated in most cases by over their own width, the apex quite smooth, and the general surface covered with a fine, sparse, and hardly evident pile. Length 5 mm., breadth 1.75 mm.

Type, a male from Mineral King, Tulare Co., Cal., July 31, 1913, paratype from Alma, Santa Clara Co., Cal., in my own collection. Besides these I have critically examined two from the Big Trees, Calaveras Co., Cal., collected July 11 and 19, 1907, by Dr. F. E. Blaisdell and five collected by Mr. Ralph Hopping from Scafford Meadow, Tulare Co., Cal., July 8 and 10, 1910, Huckleberry Meadow, Fresno Co., Cal., alt. 6,500 ft., July 19 and Round Meadow, Giant Forest, July 10. One of the Scafford Meadow specimens was captured on Jeffrey pine. One of Dr. Blaisdell's specimens and one of Mr. Hopping's specimens, I have designated as paratypes. The entire series examined was uniform as to essential characters, but somewhat variable as to size, one female being 7 mm. in length.

This specimen is undoubtedly closely related to *O. rufulum* Gahan (*rubrum* Newm.), but it differs from that by being more castaneous in color, less red, by having the eyes smaller and more widely separated above, the elytral punctuation much finer and the pubescence decidedly finer and sparser.

Clytanthus pacificus n. sp.

Black, antennæ and legs rufous, middle of thighs somewhat piceous, and patches of yellow hair disposed as follows: along the margin of the entire pronotum, over the scutellum, as a lunate bar at the juncture of the anterior and middle third of the elytra, as a transverse line midway between this and apex, over a small area at the apex close to the suture, and at the posterior part of the meso- and meta-epimeron and along the posterior margins of the ventral segments. Head densely, coarsely and shallowly punctured; the antennæ one half length of body, the third joint twice as long as second. Prothorax broader than long and densely, coarsely and verrucosely punctate, the anterior border not distinctly elevated. Elytra subparallel and over twice as long as broad. Length 9 mm., breadth 2.5 mm.

Type from Marys Peak (near Corvallis), Or., and paratype, somewhat smaller, from Carrville, Trinity Co., Cal., June 15, 1913, in my collection. The paratype has faint subbasal pubescent spots in addition to the markings noted above.

This species is closely related to *C. ruricola* Oliv. but differs mainly by having the anterior margin of the prothorax less elevated, the antennal joints proportionately shorter, the anterior yellow bar of the elytra evenly and shallowly arcuate in contrast to the deep and angulate loop of the other and the posterior bar distinctly transverse, not oblique.

Clytus blaisdelli n. sp.

Black, antennæ and legs rufous, and ornamented with yellow pubescent markings disposed as follows: a narrow band margining the pronotum, on the scutellum, on the elytra in the form of a short oblique subbasal line, a lunate and transverse band at the middle, a narrow transverse band between this and apex and a small apical patch, and small areas on the meso- and meta-episterna and along the posterior part of each ventral segment. Head shallowly cribrately punctured, with a few scattered yellow hairs along the side of the front; the antennæ half the length of the body. Prothorax as broad as long, distinctly narrower than base of elytra, with sides evenly arcuate, disc coarsely, closely, verrucosely punctate, granulate and opaque, and with a few sparsely placed long hairs. Elytra slightly more than twice as long as broad, with sides straight and subparallel, apices subtruncate, disc closely punctate, densely clothed with a fine, closely appressed pile and with a collection of longer erect hairs in the scutellar region. Beneath clothed with a double type of pubescence, the closely appressed pile disposed as indicated and in addition a longer, sparser, and silkier pubescence generally distributed. Length 9 mm., breadth 3 mm.

Type in my own collection, collected by myself at Carrville, Trinity Co., Cal., June 4, 1913. Two other specimens, kindly loaned for study, have been designated at paratypes. One from Sonoma Co., Cal., belonging to the Museum of Comparative Zoölogy at Cambridge, Mass., has the prothorax a bit broader and the two median elytral bands somewhat narrower than in the type. The other, collected by Dr. F. E. Blaisdell, near Lagunitas, Marin Co., Cal., April 25, 1910, has the markings almost white. Both specimens are also slightly larger than the type, but except as noted, agree in all other particulars.

This very elegant and graceful species which I have named after my good friend, Dr. F. E. Blaisdell, agrees with *C. marginicollis* Lap. and *C. planifrons* Lec. in regard to all characters which are of generic importance, but differs specifically from both in being proportionally narrower and more elongate, the prothorax especially narrower, and in having the color pattern slightly different. The elytral bars are always much shorter and generally much narrower. The subhumeral patch is decidedly oblique, not transverse as it is in the other two, and but little more than a spot. The general facies of the species implies a much closer relationship to some of the European species like *C. arietis* L. or *C. lama* Muls. The arrangement of the elytral markings is, however, slightly different from either.

Neoclytus clitellarius n. sp.

Dark brown, antennæ and legs reddish; pilose, longer hairs, sparse, erect and more evident on head, prothorax, base of elytra and beneath, the shorter forming a closely appressed pubescence that is dense on the pronotum and elytra and somewhat sparser on underside, the pubescence of both types gray on the head, sides of prothorax and ventral surface, elsewhere brown except for the elytral maculations which are gray and consist of a transverse lozenge-shaped saddle across the middle of the elytra, two small spots on each elytron slightly posterior to middle and a quadrangular patch at the sutural apex. Head coarsely, closely punctate; the antennæ one half length of body. Prothorax as broad as long, distinctly narrower than base of elytra, apex slightly arcuate and overlapping head, sides gradually arcuate to base where slightly constricted, the disc with median longitudinal area slightly though distinctly gibbous, the surface rather closely punctate and granulate, the median granules faintly outlining transverse rugæ. Elytra twice as long as broad, apices subtruncate. Length 9.5 mm., breadth 3.25 mm.

Type in my own collection, secured near Fallen Leaf Lake, Lake Tahoe, Cal., July 18, 1915. A second specimen was observed among the unnamed beetles in the Horn collection, in the Philadelphia Academy of Sciences.

This very distinct species is clearly defined by the saddle like gray patch at the middle of the elytra and the four small spots behind. The general color scheme is like that of no other member of the *Clytini* with which I am familiar. The generic characters are not well developed, the transverse rugæ which are so prominent a feature in most of the species of the genus being here hardly indicated though the mid portion of the pronotum is quite gibbous. Because of this last character, it could not be placed in *Clytus* where one might otherwise be inclined to put it. The color pattern is also not that of the members of that genus.

Xylotrechus cinereus n. sp.

Black, clothed with a few long hairs scattered along sides of prothorax and on ventral surface and with short, cinereous pubescence distributed sparsely over the front of head, base of antennæ and legs, more densely over the sides of prothorax and entire under surface, especially marked along the posterior margins of the sclerites, both thoracic and abdominal, and formed into a well defined design on the elytra consisting of a short transverse bar slightly posterior to the base, a line running along the suture from the scutellum to the middle thence at right angles to the margin, a third transverse bar midway between this last and apex, often broken and with outer portion a bit more posteriorly, and with an additional general suffusion of gray over the basal area of elytra and scutellum and also over the apical half. Head granulate, moderately finely and evenly punctulate, frontal carinæ well defined; antennæ barely reaching the middle of body. Prothorax four fifths as long as broad, as broad as base of elytra, sides broadly rounded at middle, gradually narrowed apically and slightly constricted at base, disc granulate and punctate like head. Elytra over twice as long as broad, sides fairly straight and convergent toward apex, the apices obliquely truncate and pointed at tip, the disc rather finely closely punctate and with many fine transverse rugæ. Male, length 15 mm., breadth 5 mm.; female, length 18 mm., breadth 6 mm.

Type male and female in my collection, the male from near Fallen Leaf Lake, Lake Tahoe, Cal., July 26, 1915, taken on *Abies concolor* Lindl. and Gord. by myself, the female from Atwoods Mill, Tulare Co., Cal., July 29, 1913. A paratype male from Tallac, Eldorado Co., Cal., July 20, 1899, belongs to Dr. F. E. Blaisdell and another paratype male, with vestiture yellowish, but otherwise identical with the others, from Fallen Leaf Lake, Lake Tahoe, Cal., July 9, 1915, is in Mr. Ralph Hopping's collection. Numerous other specimens have also been seen.

This species which has been previously considered to be but a race of the widely distributed *X. undulatus* Say not only differs from that species by its color and distinctive color pattern but by having a different food tree. It always breeds in the true firs, *Abies,* as both Mr. Hopping and I have many times observed, whereas *undulatus* lives in either the true spruces, *Picea,* or their closer relative like *Pseudotsuga.* The pile of *cinereus* is usually white, is always more or less diffusely scattered over the prothorax and the basal and apical parts of the elytra, and the median markings of the elytra always follow the suture to about the middle then turn at right angles. The elytra are also proportionally narrower and the apices more distinctly pointed. In *undulatus,* the design, whether complete or not, is always more sharply defined against its background, there is an absence of that diffuse sprinkling of colored hairs over the surface, and the markings along the suture diverge considerably from it as they proceed backwards. At one time I was inclined to consider *cinereus* as but a western race of *X. fuscus* Kirby, a species which has been proven by Mr. C. A. Frost to feed on the true fir and as stated by Col. Casey[1] is quite distinct from *undulatus.* The color pattern of *fuscus,* is, however, quite different from that possessed by either *undulatus* or *cinereus,* the elytral markings in fresh and fully colored individuals consisting of a series of long and angular loops. In *cinereus,* the scutellum is always densely clothed with white hair while in the other two species, it is almost universally naked.

Xylotrechus insignis Lec.

This species is not only one of the most elegant in the genus but is remarkable in having the sexes so differently colored. It is widely distributed throughout California and runs well into Southern Oregon. The females which are black with rufocastaneous antennæ and legs and variously barred with sharply defined yellow markings above, vary somewhat as to size and as to the breadth of the yellow markings, but as a whole may be considered to be fairly constant. The males, however, vary considerably. The typical male is rufous with the prothorax generally slightly margined with yellow both apically and basally, with a crescentic yellow patch transversely crossing the scutellum, a short yellow bar running inwards from the humeri, a transverse bar placed entirely across the elytra one third distant from the apex and a small poorly defined patch at the apex. This is the form which is generally to be found distributed throughout the middle portion of California and the Sierras. One specimen which I have seen from San Diego, is like the preceding, but with the markings white instead of yellow. In the northern counties and again in the south, the males have a tendency to have also a rather faintly defined crescentic line at the middle of the elytra and in addition a general suffusion of yellow hairs over the elytra. The specimens with the median markings are more common in the north and the specimens with the yellow suffusion best developed in the south as about Los Angeles. These are of course but mere races for typical forms are to be found with them as well as intergrades. Colonel Casey's *incongruus* is the northern suffused form and his *X. disruptus,* the female of one of the southern phases. There is also another and quite distinct race which was secured in numbers by Mr. F. W. Nunenmacher, at Kirby, Josephine Co., Or., June 11, 1910. The specimens were all males, of the usual rufous color with the prothorax, but slightly peppered with white hairs and the elytra sometimes with and sometimes without white oblique bars, with either transverse median white spots or bars, the subapical white bar always present, and in addition a general peppering of the surface with white hairs. This I consider a distinct geographical race for which I propose the subspecific name *nunenmacheri* after its discoverer. *Insignis* lives entirely in willow as far as I know and has the habit, particularly the males, of often resting on various plants like the thick-leaved milkweeds and mullens. Mr. J. J. Rivers was, I believe, the first to breed out the beetle from its food tree and prove the specific identity of the two sexes. I have also bred it and dug out colonies on numerous occasions and in various parts of the state. *X. obliteratus* Lec., described from Colorado and for some time considered to be the male of *insignis,* appeared to me, after a very careful examination of the type, to be rather more closely related to *X. mormonus* Lec., perhaps a phase of that Rocky Mountain species.

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[1] "Memoirs on the Coleoptera," III (1912), by Thos. L. Casey, p. 359.

Leptura scapularis n. sp.

Short, black, with triangular orange red patches at the humeri and a small tail-like appendage extending on to the epipleuræ, with short, rather sparse gray pile covering all of the body except the black portions of the elytra and most evident on the pronotum and underside, and a black pile covering the black parts of the elytra. Head with mouthparts but moderately prolonged, broad between the eyes, not very suddenly constricted back of eyes, with a broad neck, coarsely, densely punctate, opaque; antennæ moderately stout and extending slightly beyond middle of body. Prothorax campanulate, as broad as long, three fourths as broad as base of elytra, base twice as broad as apex, transverse basal impressions shallow, posterior angles short, narrow and extending directly outwards. Sides not dilated in front of middle, the disc closely, coarsely punctate and opaque. Scutellum rather finely punctate. Elytra twice as long as broad, humeral angles rounded and not very prominent, sides a bit arcuate and slightly convergent to apex, apices obliquely truncate, disc distinctly and moderately punctate. Length 8 mm., breadth 3 mm.

Type, a unique in my collection, captured at Havilah, Cal., June 19, 1905, by Mr. Fordyce Grinnell.

This very distinctly marked *Leptura* would come in our tables perhaps just before *L. sexpilota* Lec. The prothorax is of about the same type as in that species though the insect is as a whole somewhat larger, generally more robust and with an entirely different color pattern not only from that but from any having a similar shaped prothorax. Some few of our Lepturas have the humeri often with triangular patches of red as for instance an occasional *L. canadensis* Fab., a male of *L. lætifica* Lec., and so forth, but these all differ very greatly from this otherwise. The species is evidently extremely local or else very rare as this is the only specimen that I have seen.

Leptura amabilis Lec.

This insect as shown by the type which I have recently critically examined is nothing more than one of the darker phases of *L. tribalteata* Lec. with the yellow bars reduced almost to spots. It is often found in the more northern parts of the range of the species. The name *amabilis* has priority over *tribalteata*. *L. coquilletti* Linnell is the extreme phase at the other end of the area of distribution and extreme in its color pattern as well. Intermediates have been seen which link all three together.

Leptura hirtella Lec.

This is merely the male of *L. tibialis* Lec., the latter name having priority by many years.

Leptura vexatrix Mann.

This species and *L. quadrillum* Lec. are merely northern and southern races of the same thing, *quadrillum* being the darker phase restricted to Washington, Oregon, and northwestern California, *vexatrix,* the lighter form of the more inland portions of northern California. They grade gradually into each other. *Vexatrix* has priority over *quadrillum.*

Encyclops californicus n. sp.

Castaneous, prothorax somewhat rufous, upper side of head and apices of middle and hind tibiæ and tarsi piceous. Head moderately finely, closely punctate, clothed with a very fine, short and sparse pubescence; antennæ slightly longer than body. Prothorax distinctly and closely punctate at sides, slightly less at base and apex, and almost smooth on disc, with a well-defined median longitudinal sulcus extending two thirds distance forward from base, lateral tubercles rounded and prominent, the prothorax distinctly broader through them than at base. Elytra three and a half times as long as broad, broadest at base, sides gradually convergent to apex, apices broadly rounded, disc flattened, rather coarsely and closely punctate, more finely apically and clothed with fine, short, and sparse hair. Beneath very finely punctured and pubescent. Length 9.5 mm., breadth 2.25 mm.

Type, a male in my collection, collected by myself in the Cañon near Lagunitas, Marin Co., Cal., June 4, 1911. Only one other specimen has been seen, a specimen in the Horn collection in the Philadelphia Academy, placed close to *Leptura quadricollis* Lec.

This species as far as generic characters and facies are concerned is typically an *Encyclops,* but it differs greatly specifically from *E. cœruleus* Say by being generally larger, of an entirely different color, by being distinctly though finely pilose, and by having the punctures less sharply defined. It is the first member of the genus to be found on the Pacific Slope.

Liopus barbarus n. sp.

Form robust, densely clothed above with cinereous pubescence, the elytra clouded with darker and lighter bands and spotted with black. Head cinereous, flat; the antennæ reaching several joints beyond the apex of the elytra and with the joints annulated at tip with black, the third joint long, the fourth slightly shorter, the fifth still shorter, and the sixth to the eleventh gradually shorter and narrower. Prothorax one third broader than long, surface cinereous with two darker spots on either side of middle, the sides with a prominent tubercle the greater portion of which is posterior to the middle, and which terminates in a slightly backward pointing spine, the disc with a faint longitudinal median sulcus. Elytra somewhat broader at base than prothorax, twice as long as broad, with sides almost parallel at basal half and gradually narrower at apical half, the apices rounded, the disc cinereous with a broad angulated darkly margined white bar just in front of the middle, a W-shaped black line between center and apex, a white area margined behind with black near apex and six rows of irregularly spaced black spots situated along the costæ. Body beneath and greater portion of legs densely clothed with a silvery white pubescence. Male, length 11 mm., breadth 2.5 mm.; female, length 13 mm., breadth 3.5 mm.

Type male and female in my collection, received from Mr. H. C. Muzzall who reared them at Carpenteria, Santa Barbara Co., Cal., April 20, 1918, from dead limbs of the California live oak, *Quercus agrifolia* Neé. Nine other specimens, also received from Mr. Muzzall, are in my collection and I have seen another collected by Mr. H. C. Kennedy on one of the Santa Barbara islands which is now in the collection of Cornell University. One of my paratypes will be deposited in the U. S. National Museum. The specimens vary only slightly and that chiefly as regards the intensity of the various shades of the color pattern.

This, the largest species of the genus in this country, resembles none of the other species very closely though it is perhaps closest to *L. variegatus* Hald. in structure. It also approaches *Leptostylus* and in color pattern simulates *L. nebulosus* Horn or in the matter of design even more closely *Acanthoderes decipiens* Hald. It is, however, a true *Liopus* as judged by its more typical characters for it possesses a but slightly clubbed first antennal joint, a distinctly spined prothorax, a triangular mesosternum and has the first tarsal joint of the hind tarsi longer than the next two.

Pogonocherus pilatei n. sp.

Robust, piceous, antennæ and bases of legs rufous, clothed with a gray pubescence, variegated with black on the elytra, with a few scattered longer hairs on the antennæ, legs and entire upper surface, the hair gray in the gray areas and black in the black patches. Head pubescent, the hairs either white or black; antennæ slightly longer than body in female and distinctly so in male and annulated. Prothorax broader at middle than long, lateral and discal prominences distinct but obtuse, the pubescence as on head. Elytra twice as long as broad, very convex, tricostate, the outer one distinct throughout length, the inner two distinct in apical half only though evident even across the ante-median gray saddle, the innermost developing into a black tufted tubercle at base, the apices rounded, the color pattern as follows: gray with a lunate black mark connecting the basal tubercles, a broad gray somewhat lunate saddle-like patch just posterior and extending to middle, this last margined posteriorly with oblique black lines which continue backwards along the innermost costæ for a short distance then turn and run obliquely outwards towards the margin, outlining triangular areas at the sides which are often more or less darkened, and with a few small black tufts scattered over the surface especially along the suture and the costæ. Beneath gray and unicolorous. The third tarsal joint of all legs padded beneath with yellow hair over almost the entire area, the first and second joints similarly padded over apical regions, the joints of the last pair of legs to a less degree though very evidently so. Male (a small specimen), length 6 mm., breadth 2 mm.; female (normal-sized specimen), length 8 mm., breadth 3 mm.

Type male and female in my collection, collected by Mr. G. R. Pilate from *Fremontodendron* (*Fremontia*) *californicum* Torr., at Havilah, Cal., May 30, 1913, and June 13, 1913. Seven other specimens, all females, collected at the same place, are also in my collection. The species is named after Mr. Pilate as a slight tribute for many favors.

The species resembles the more distinctly marked specimens of *P. californicus* Schaef., especially as regards its color pattern. It differs from the latter chiefly in having three distinctly defined elytral costæ, the outermost only in *californicus* being distinct, in having the tarsal joints, particularly the posterior ones, more fully padded beneath with yellow hair, the first and second tarsal joints of the last pair of legs in *californicus* having hardly a trace of yellow beneath, by having no yellowish hairs mixed with the gray as is the case with the other, by having a transverse black lunule just back of the scutellum, a triangular area at the middle of the elytra merely outlined with black, not solidly black, and by having in addition an oblique line running down the declivity. In addition the food plant is very different, that of *californicus* being the western yellow pine, *Pinus ponderosa* Dougl., of *pilatei*, the peculiar shrub, *Fremontodendron*.

All of the species of *Pogonocherus* that are found in California and probably also those found elsewhere are distinctly restricted to certain types of food plants. Besides those mentioned above, it has been found that *P. crinitus* Lec. is only found on the oaks, chiefly the California live oak; *P. oregonus* Lec. on the true firs, *Abies;* and *P. propinquus* Fall on the western yellow pine. *P. concolor* Schaef. is probably also found on pine and is besides, I am sure, only a color variety of *californicus.* I have a specimen of *concolor* that is more uniformly gray than is the type and have also many undoubted *californicus* that approach it. The majority of the northern specimens have the black median triangular areas almost as distinctly defined as is the black bar in *oregonus,* while others have it but vaguely indicated as is the case with the type. Fresh specimens of *californicus* also have long flying hairs on both antennæ and legs. Mr. Fall,[2] in his table where he stated the opposite, was misled by having to rely upon poor specimens.

A NEW SPECIES OF TYPHLOCYBA FROM ILLINOIS (HEMIPTERA, HOMOPTERA).

By J. R. Malloch, Urbana, Ills.

The type specimen of the species described herein is deposited in the collection of Illinois State Natural History Survey. The food plant of the species is unknown.

Typhlocyba rubriocellata sp. n.

Female.—Greenish yellow. Head, thorax, and scutellum without markings. Elytra with a large blood-red mark which does not reach base, costal, or inner margins and extends over one third of the distance to cross-veins; a rather broad infuscation in apices of the cells along proximal side of cross-veins and in those on inner and costal margins on distal side. Sheath of ovipositor tipped with black.

Head evenly rounded in front; vertex about twice as wide at posterior margin as its length at middle. Venation as in *querci.* Apical abdominal sternite with a small rounded notch in middle at apex.

Length, 3.75 mm.

Type: Augerville Grove, Urbana, Ill., June 20, 1919 (J. R. Malloch).

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[2] "New Species of Pogonocherus, with Synoptic Table," by H. C. Fall, Entom. News, Vol. XXI (January, 1910), p. 7.